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DIABETES SURGERY BY ONE ANASTOMOSIS GASTRIC BYPASS: WHICH PREOPERATIVE PARAMETERS INFLUENCE THE OUTCOME?

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DM non surgical treatment outcome

- Despite progress in diagnosis
- Many pharmacological agents
- Customized diets and exercise programs
- Behavior modifications protocols




-92,7% DM2 patients fail to meet ADA targets:

- *HbA1c<7,0%
- *LDL<100mg/dl
- *Triglycerides<150 mg/dl

JAMA 2004;291:335-42

DM non surgical treatment outcome

- Despite progress in diagnosis
- Many pharmacological agents
- Customized diets and exercise programs
- Behavior modifications protocols



-Chronic disease

-Costly medical therapy

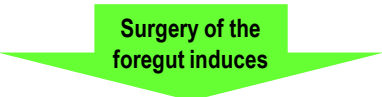
-Disabling complications

-Decreased life expectancy

Diabetes Surgery

For patients who cannot or will not commit to:

- medication
- exercise
- life style modifications



A full and durable remission of DM in more than 80% of DM2 obese patients

Surgery in the resolution of DM2 BMI >35
 (JAMA 2004;292:1724-37)

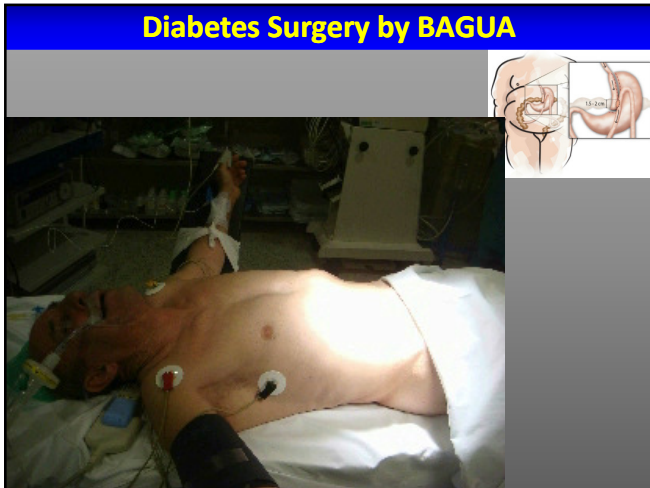
EFICACY OF DIFFERENT BARIATRIC PROCEDURES

	Band	Gastric Bypass	BPD
Resolution DM2	48%	84%	98%
Resolution HBP	43%	68%	83%
Improvement hyperlipidemia	59%	97%	99%
% PEW loss	47%	62%	70%

Surgery in the resolution of DM2 BMI >35 (Am J Med 2009;122:248-56)					
	TOTAL	BAND	BVG	GB	BPD/DS
% EWL	55,9	46,2	55,5	59,7	63,6
% RESOLUTION GLOBAL	78,1	56,7	79,7	80,3	95,1
RESOLUTION < 2 years	80,3	55,0	81,4	81,6	94,0
RESOLUTION > 2 years	74,6	58,3	77,5	70,9	95,9

Surgery in the resolution of DM2 BMI 25-34 (Obes Surg 2010;20:776-90)					
	TOTAL	BAND	VBG	GB	BPD/DS
GLOBAL % RESOLUTION	78,1	56,7	79,7	80,3	95,1
GLOBAL RESOLUTION		72.2		97.7*	72.9

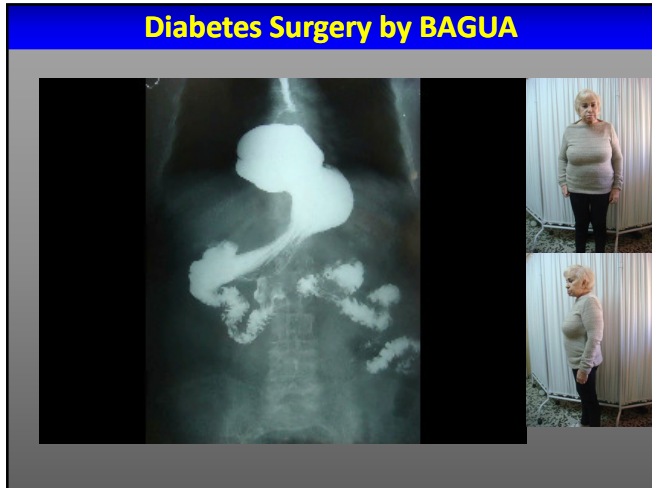
*GB: Y-Roux or Single Anastomosis
 **Criteria of success:
 -Basal glycemia < 99 mg/dl. HbA1c <6%. No DM2 treatment
 -Resolution DM2 85.3% (**81.8%** BMI25-30 and **89.1%** BMI30-35)
 ***Follow-up: 6 to 216 months



Diabetes Surgery by BAGUA	
Patients characteristics	N=24
Primary surgery	
BMI 25-29	9
BMI 30-34	9
Associated procedures	
Repair of Incisional hernia (BMI 30-34)	1
Giant hiatal hernia (BMI 30-34)	1
Previous surgery (adhesiolysis)	
BMI 25-29	1
BMI 30-34	3

Diabetes Surgery by BAGUA			
Patients characteristics	n=24	Re-operation	Mortality
Primary surgery			
BMI 25-29	9	1 bleeding	
BMI 30-34	9		
Associated procedures			
Repair of Incisional hernia (BMI 30-34)	1		
Giant hiatal hernia (BMI 30-34)	1		
Previous surgery (adhesiolysis)			
BMI 25-29	1		
BMI 30-34	3		

Diabetes Surgery by BAGUA			
BMI	Gastric pouch	Length excluded intestine	Weight loss
< 25	Half gastric body	70 cm	<10 kg
26-29	Half gastric body	100 cm	10 – 15 kg
30-32	Bigger than obese	120 cm	15- 20 kg
33-34	Similar to obese	150 cm	20-25 kg



DS by BAGUA: Resolution since surgery

Patient	Age	BMI	C Peptide	HbA1c	Years DM	Years IN	Comorbidities	CM solve
1 M	65	26	4,21	6,2%	2	0	Triglycerides	100%
2 M	58	27	1,49	8,6%	17	0	HBP	100%
3 M	58	29	2,59	8,9%	15	0	Cholesterol	100%
4 F	47	28	1,72	7,1%	10	0	HBP, cardiopathy, Ch+Trigly	Cardiopathy
5 M	58	34	0,90	11,0%	12	0	HBP, Ch+Trigly	100%
6 M	57	33	0,91	8,0%	15	5	HBP, cardiopathy, Ch+Trigly	Adiro
7 F	80	31	1,21	8,5%	10	2	HBP, Ch+Trigly	100%
8 F	48	33	1,69	8,6%	14	2	HBP, Ch+Trigly, Depression, Joint	Depression
9 F	55	34	1,24	8,5%	15	7	HBP, Ch+Trigly, Depression, Joint	100%
10M	46	31	2,03	9,2%	12	0	HBP	100%

DS by BAGUA: Resolution 1 month after surgery

Patient	Age	BMI	C Peptide	HbA1c	Years DM	Years IN	Comorbidities	CM solve
1 M	66	26	1,57	8,9%	30	2	Angioneurotic oedema	100%
2 M	58	26	1,49	6,7%	20	10	HBP, cardiopathy, Ch+Trigly	Cardiopathy
3 M	80	27	1,72	8,9%	15	0	HBP, Cholesterol	100%
4 M	67	28	1,43	7,8%	11	3	HBP, cardiopathy, Ch+Trigly	100%
5 M	60	29	2,27	8,3%	25	20	HBP, Ch+Trigly	100%
6 M	58	29	2,00	8,0%	10	2	HBP, Ch+Trigly	100%
7 M	61	25	0,24	8,5%	12	8	HBP, Ch+Trigly, Peripheral vasculopathy	100%
8 F	58	31	2,69	9,6%	8	2	HBP, Ch+Trigly, Depression	Depression

DS by BAGUA: Resolution 3 month after surgery

Patient	Age	BMI	C Peptide	HbA1c	Years DM	Years IN	Comorbidities	CM solve
1 M	69	33	0,88	7,9%	22	20	HBP, cardiopathy, Ch+Trigly, Hip and Knee Prothesis	Cardiopathy
2 F	63	25	0,45	9%	19	7	Nephropathy, Primary Biliary Cirrhosis	Primary Biliary Cirrhosis

DS by BAGUA: Improvement

Patient	Age	BMI	C Peptide	HbA1c	Years DM	Years IN	Comorbidities	CM solve
1 M	32	34	0,02	8,9%	5	5	Hypersideremia	100%
2 M	34	34	0,01	9,7%	26	26	Cholesterol	100%
3 M	76	26	0,00	8,9%	30	20	HBP, Cholesterol, Triglycerides	100%
4 M	65	30	0,06	8,6%	11	5	HBP, Cholesterol, Triglycerides	100%

Diabetes Surgery by BAGUA

Summary

-24 operated: 20 Resolution (83,3%)
 04 Improvement (16,7%)

Best results: Non insulin treatment
 Short term insulin treatment
 High Peptide C levels

Not clear relationship: Age?
 Years of disease?

Majority of men (75%)

CONCLUSIONS

1. BAGUA is a very versatile procedure that permit to tailor surgery to the conditions of the DM patient
2. Weight loss could be controlled with the size of gastric pouch and the length of the excluded intestine
3. Immediate resolution of DM correlated with non insulin or short term insulin treatment and high Peptide C levels
4. Long term insulin independent patients and those with no pancreatic reserve obtained only an improvement of the DM as well as metabolic syndrome

GRACIAS
Thank you

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